

## CLAIMS

- 1 1. A method for establishing headroom for a mobile station operating in a  
2 wireless communication system comprising the steps of:  
3 determining a communication channel variance condition; and  
4 establishing a headroom value based on the communication channel  
5 variance condition.
- 1 2. A method according to claim 1 wherein a mobile station performs the steps  
2 of determining and establishing.
- 1 3. A method according to claim 2 wherein the mobile station determines a  
2 maximum data rate based on the headroom value and sends the maximum data  
3 rate to a base station.
- 1 4. A method according to claim 2 wherein the mobile station determines a  
2 maximum data rate based on the headroom value and sends a rate adjustment  
3 request to a base station.
- 1 5. A method according to claim 2 further comprising the steps of:  
2 detecting a battery condition of the mobile station; and  
3 modifying the headroom value based on the battery condition.
- 1 6. A method according to claim 5 wherein the step of modifying the  
2 headroom value based on the battery condition comprises:  
3 determining if the battery condition relates to a low battery level; and  
4 if the battery condition relates to a low battery level, increasing the  
5 headroom value.
- 1 7. A method according to claim 2 wherein the step of determining a  
2 communication channel variance condition includes measuring a variance in a  
3 primary pilot power.

1 8. A method according to claim 1 wherein a base station performs the steps of  
2 determining and establishing.

1 9. A method according to claim 8 wherein the step of determining a  
2 communication channel variance condition includes examination of an inner loop  
3 power control bit stream.

1 10. A method according to claim 8 further comprising the step of:  
2 sending the headroom value to the mobile station.

1 11. A method according to claim 8 further comprising the step of:  
2 determining a data rate assignment for a mobile station using the headroom  
3 value and sending the data rate assignment to the mobile station.

- 1 12. A mobile station comprising:  
2 means for determining a communication channel variance condition; and  
3 means for establishing a headroom value based on the communication  
4 channel variance condition.
- 1 13. A mobile station according to claim 12 further comprising:  
2 means for determining a maximum data rate based on the headroom value;  
3 and  
4 means for sending the maximum data rate to a base station.
- 1 14. A mobile station according to claim 12 further comprising:  
2 means for determining a maximum data rate based on the headroom value;  
3 and  
4 means for sending a rate adjustment request to a base station.
- 1 15. A mobile station according to claim 12 further comprising:  
2 means for detecting a battery condition of the mobile station; and  
3 means for modifying the headroom value based on the battery condition.

1 16. A wireless communication system comprising:  
2 a base station;  
3 at least one mobile station;  
4 means for determining a communication channel variance condition; and  
5 means for establishing a headroom value based on the communication  
6 channel variance condition.

1 17. A wireless communication system according to claim 16 further  
2 comprising:  
3 means for determining a data rate based on the headroom value.

1 18. A wireless communication system according to claim 17 further  
2 comprising:  
3 means for sending the data rate between the base station and said at least  
4 one mobile station.

1 19. A wireless communication system according to claim 16 further  
2 comprising:  
3 means for determining a battery condition of said at least one mobile  
4 station; and  
5 means for modifying the headroom value based on the battery condition.

1 20. A wireless communication system according to claim 19 further  
2 comprising:  
3 means for determining a data rate based on the headroom value; and  
4 means for sending the data rate between said at least one mobile station  
5 and the base station.